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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**  
**BOARD OF PATENT APPEALS AND INTERFERENCES**

Applicant : Dennis M. Hilton, et al.  
Serial No. : 10/657,494  
Filed : September 8. 2003  
For : FOAMED FIREPROOFING COMPOSITION AND METHOD  
Examiner : Zemel, Irina Sopjia  
Art Unit : 1711  
Confirmation No. : 1928  
Customer No. : 42754  
Attorney :  
Docket No. : 621P002Div.  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

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Kevin S. Lemack  
Name of applicant, assignee, or Registered Representative  
[Signature]  
Signature  
January 11, 2006  
Date

Sir:

**APPEAL BRIEF**

The Appellants hereby submit this brief in support of the Appellants' appeal from the decision of the Examiner dated July 7, 2005 rejecting claims 1-11.

A check in the amount of \$500.00 for the fee for filing a brief in support of an appeal pursuant to 37 C.F.R. §1.17(f) is enclosed.

**I. REAL PARTY IN INTEREST**

The real party in interest is W.R. Grace & Co.-Conn., the assignee of record.

## **II. RELATED APPEALS AND INTERFERENCES**

To the best of the Appellants' knowledge, the following applications are under appeal and no other appeals or interferences are pending and are related to this appeal: Serial Nos. 10/674,745; 10/306,594 and 10/044,407. There are no related interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in this pending appeal.

## **III. STATUS OF CLAIMS**

Claims 1-11 are pending in the subject application and stand rejected.

## **IV. STATUS OF AMENDMENTS**

An amendment to claim 9 was mailed, with a one-month extension of time, on January 5, 2006, subsequent to the final rejection of July 7, 2005.

## **V. SUMMARY OF CLAIMED SUBJECT MATTER**

Independent claim 1 relates to a dry mixture for forming a fireproofing composition (page 4, lines 2-3) adapted to be spray applied to a steel substrate (page 4, lines 17-22). The dry mixture includes a hydraulic binder, a foam stabilizing agent, and a set retarder (page 4, lines 17-19). The dry mixture provides a pumpable slurry upon the addition of water (page 10, lines 18-20), and a settable foam upon the application of

mechanical turbulence to the pumpable slurry (page 7, line 18 to page 8, line 5).

#### **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Whether claims 10 and 11 are indefinite under 35 U.S.C. §112, second paragraph.

Whether claims 1-8 and 11 are unpatentable under 35 U.S.C. §103(a) over any one of Ayambem et al., U.S. 2003/0105204, U.S. 2002/0038618, U.S. Patent no. 6,645,291 or U.S. Patent No. 6,436,185.

Whether claim 9 is unpatentable under 35 U.S.C. §103(a) over any of the aforementioned Ayambem et al. references in combination with applicants' own admission of record.

#### **VII. ARGUMENT**

##### **1. Claims 10 and 11 are not indefinite.**

The Examiner states that claims 10 and 11 claim the amount of stabilizing agent in reference to the amount of water, which is not part of the claimed mixture, and thus are indefinite.

Appellant respectfully disagrees.

The effective amount of stabilizing agent is added to the dry mixture based upon the knowledge that water will eventually be added to create the slurry. That the water does not form part of the claimed dry mixture does not render indefinite the amount of stabilizing agent, since those skilled in the art can readily determine the amount of water necessary to form the

slurry. That is, the amount of the agent is based upon a predetermined amount of water to be added to the dry mixture at a later point. In addition, Table 1 on page 18 of the specification provides six different formulations with the amount of water set forth.

**2. Claims 1-8 and 10-11 are not obvious over any one of the Ayambem et al. references**

To establish a *prima facie* case of obviousness, the prior art must teach or suggest all the limitations of a claim, there must exist a suggestion or motivation in the references themselves or as a matter of general knowledge to modify the references, and there must be a reasonable expectation of success. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). However, the Examiner may not establish obviousness using hindsight or in view of the teachings or suggestions of the Appellants. *Para-Ordnance Manufacturing, Inc. v. SGS Importers International, Inc.*, 73 F.3d 1085, 37 U.S.P.Q.2d 1237 (Fed. Cir. 1995). "To draw on hindsight knowledge of the...invention, when the prior art does not contain or suggest that knowledge, is to use the invention as a template for its own reconstruction--an illogical and inappropriate process by which to determine patentability." *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 38 U.S.P.Q.2d 1551 (Fed. Cir. 1996). All limitations of a claim must be

taught or suggested by the cited references to establish prima facie obviousness. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974).

The Examiner's position is that each of the cited references discloses dry compositions containing a hydraulic binder; a foam stabilizing agent such as PVA, and set retarder, and that the any amount of stabilizing agent would provide some degree of stabilization.

Appellants respectfully disagree, for the following reasons.

The two Ayambem et al. publications are the respective publications of the two Ayambem et al. patents cited by the Examiner, and therefore are merely cumulative. Moreover, the two Ayambem et al. patents are related as continuations, so they are also cumulative of each other. Accordingly, the following discussion will focus on Ayambem et al., U.S. Patent No. 6,436,185, but applies to each of the cited Ayambem references as well.

Ayambem et al. disclose a joint compound for use in filling and coating joints between adjacent gypsum wallboard sheets. More specifically, the objective of the invention of Ayambem et al. is developing a hybrid drying-type/setting-type joint compound. To that end, the joint compound necessarily includes water, calcium carbonate, optionally calcium sulfate hemihydrate, and a water-soluble set retarder. Indeed, the

amount of water used is from about 20 wt.% to about 37 wt.% based on total weight of the compound.

PVA is disclosed as a binder to improve bonding to the substrate such as wallboard. However, Ayambem et al. do not disclose or suggest a dry mixture; the joint compound of Ayambem et al. necessarily contains water. Moreover, there is no indication that the joint compound is pumpable upon the addition of water, or that upon the application of mechanical turbulence, forms a settable foam capable of spray application, as required by the instant claims. Indeed, typical application methods disclosed for joint compounds are with a knife, blade or trowel.

In addition, the instant claims require that the foam stabilizing agent is present in the dry mixture in an amount effective for stabilizing the foam. Ayambem et al. do not disclose or suggest using a foam stabilizing agent, or using a foam stabilizing agent in an amount effective for stabilizing foam as now claimed. Indeed, foaming is nowhere contemplated by Ayambem et al. That polyvinyl alcohol is disclosed in Ayambem et al. as a binder is insufficient to render obvious its use in an amount effective for stabilizing foam, particularly where Ayambem et al. nowhere contemplates foaming the joint compound. Equally compelling is the teaching in Ayambem et al. of the optional addition of a defoaming agent (see column 9, lines 19-25). Accordingly, even were the Examiner correct that any amount of PVA would provide some

degree of stabilization, this would be rendered useless upon addition of a defoaming agent. The presence of a defoaming agent teaches away from a foam stabilizing agent in an amount effective for stabilizing foam.

Furthermore, claim 1 expressly recites that the dry mixture provides, upon the application of mechanical turbulence to the pumpable slurry, a settable foam. There is no disclosure or suggest in Ayambem et al. that the application of mechanical turbulence to the joint compound would provide a settable foam. Nor is there any motivation provided In Ayambem et al. to apply mechanical turbulence to form a settable foam.

**2a. Claims 10 and 11 are separately patentable**

Claims 10-11 recite specific "effective amounts" of polyvinyl alcohol as a foam stabilizing agent. These amounts are from about 1% to 12% based on the mass of water added to the dry mixture to form the pumpable slurry (claim 10) and from about 2% to 3% by mass of water added to the dry mixture to form the pumpable slurry (claim 11). In contrast, the polyvinyl alcohol binder of Ayambem et al. is used in an amount of about 0.1 wt% to about 0.4 wt % based on the total weight of joint compound. This is substantially less than an amount effective for stabilizing foam as required by the instant claims, and no motivation is present to raise the amount to fall within the claimed ranges.


3. Claim 9 is not obvious over any one of the Ayambem et al.  
references in combination with Applicants' own admission.

Claim 9 is believed to be patentable by virtue of its dependence, for the reasons discussed above with respect to claim 1. In addition, the Examiner's position that Applicants' statement that those skilled in the art can readily determine which commercially available polyvinyl alcohol powders are suitable is an implication that the claimed PVA powders are well known and choosing it would have been obvious is incorrect. The determination by those skilled in the art referred to by Applicant is only after the skilled artisan has read and understood the teachings of the instant specification.

**CONCLUSION**

For the reasons set forth above, the Appellant requests that the Examiner's rejections of claims 1-11 and 16 be reversed and that all pending claims be allowed.

Respectfully submitted,

  
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## APPENDIX

### CLAIMS ON APPEAL

1. A dry mixture for forming a fireproofing composition adapted to be spray applied to a steel substrate, said dry mixture comprising a hydraulic binder, a foam stabilizing agent, and a set retarder, said dry mixture providing, upon the addition of water, a pumpable slurry, and upon the application of mechanical turbulence to said pumpable slurry, a settable foam capable of spray application to a steel substrate and which, after spray application is adherent to said substrate, said foam stabilizing agent being present in said dry mixture in an amount effective for stabilizing said settable foam.

2. The dry mixture of claim 1, wherein said foam stabilizing agent is powdered polyvinyl alcohol.

3. The dry mixture of claim 1, wherein said hydraulic binder is stucco.

4. The dry mixture of claim 1, wherein said dry mixture further comprises calcium carbonate.

5. The dry mixture of claim 1, wherein said dry mixture further comprises alpha-olefin sulfate.

6. The dry mixture of claim 1, wherein said dry mixture further comprises glass fibers and cellulosic fibers.

7. The dry mixture of claim 4, wherein said dry mixture further comprises alpha-olefin sulfate.

8. The dry mixture of claim 4, wherein said dry mixture further comprises glass fibers and cellulosic fibers.

9. The dry mixture of claim 2, wherein the average particle size of said powdered polyvinyl alcohol ranges from 80 to 400 microns.

10. The dry mixture of claim 1, wherein said effective amount of said foam stabilizing agent is from about 1% to 12% by mass of water added to said dry mixture to form said pumpable slurry.

11. The dry mixture of claim 2, wherein said effective amount of said foam stabilizing agent is from about 2% to 3% by mass of water added to said dry mixture to form said pumpable slurry.



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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

LETTER OF TRANSMITTAL

There is filed herewith Appellant's Brief on Appeal in the above-identified case.

The due date of Appellant's Brief is two months from the date of receipt (October 11, 2005) by the PTO of Appellant's Notice of Appeal: namely, December 11, 2005. This due date is now extended by one month so as to expire **January 11, 2006** by virtue of the petition for extension of time filed with the Amendment After Final on January 5, 2006, together with the applicable extension fee.

A check in the amount of \$500.00 in payment of the Brief on Appeal fee is enclosed herewith.


The Commissioner is hereby authorized to charge payment of any additional fees associated with this communication or credit any overpayment to Deposit Account No. 14-0930.

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Signature: Kevin S. Lemack

Date: **January 11, 2006**

Respectfully submitted,

  
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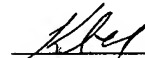
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

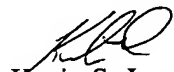
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Appeal No. :

**-BRIEF ON APPEAL-**

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Effective on 12/08/2004.

Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

**FEE TRANSMITTAL**  
**For FY 2005**☐ Applicant claims small entity status. See 37 CFR 1.27**TOTAL AMOUNT OF PAYMENT** (\$) 500.00**Complete if Known**

Application Number	10/657,494
Filing Date	September 8, 2003
First Named Inventor	Dennis M. Hilton
Examiner Name	Zemel, Irina Sopjia
Art Unit	1711
Attorney Docket No.	621P002Div.

**METHOD OF PAYMENT** (check all that apply)☒ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): \_\_\_\_\_☒ Deposit Account Deposit Account Number: 14-0930 Deposit Account Name: Nields & Lemack

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☐ Charge fee(s) indicated below☐ Charge fee(s) indicated below, except for the filing fee☒ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17☒ Credit any overpayments**WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**FEE CALCULATION****1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	<u>Small Entity</u> Fee (\$)	Fee (\$)	<u>Small Entity</u> Fee (\$)	Fee (\$)	<u>Small Entity</u> Fee (\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

**2. EXCESS CLAIM FEES**Fee Description

Each claim over 20 (including Reissues)

Each independent claim over 3 (including Reissues)

Multiple dependent claims

<u>Fee (\$)</u>	<u>Small Entity</u> <u>Fee (\$)</u>
50	25
200	100
360	180

<u>Total Claims</u>	<u>Extra Claims</u>	<u>Fee (\$)</u>	<u>Fee Paid (\$)</u>
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- 20 or HP = \_\_\_\_\_ x \_\_\_\_\_ = \_\_\_\_\_

HP = highest number of total claims paid for, if greater than 20.

<u>Indep. Claims</u>	<u>Extra Claims</u>	<u>Fee (\$)</u>	<u>Fee Paid (\$)</u>
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- 3 or HP = \_\_\_\_\_ x \_\_\_\_\_ = \_\_\_\_\_

HP = highest number of independent claims paid for, if greater than 3.

<u>Multiple Dependent Claims</u>
<u>Fee (\$)</u> <u>Fee Paid (\$)</u>

**3. APPLICATION SIZE FEE**

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

<u>Total Sheets</u>	<u>Extra Sheets</u>	<u>Number of each additional 50 or fraction thereof</u>	<u>Fee (\$)</u>	<u>Fee Paid (\$)</u>
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- 100 = \_\_\_\_\_ / 50 = \_\_\_\_\_ (round up to a whole number) x \_\_\_\_\_ = \_\_\_\_\_

**4. OTHER FEE(S)**

Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): Brief on Appeal Filing FeeFees Paid (\$)\$500.00**SUBMITTED BY**

Signature		Registration No. 32,579 (Attorney/Agent)	Telephone 508-898-1818
Name (Print/Type)	Kevin S. Lemack		Date January 11, 2006

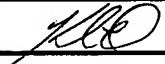
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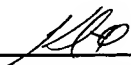
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<b>TRANSMITTAL FORM</b> JAN 17 2006 PATENT & TRADEMARK OFFICE to be used for all correspondence after initial filing)	Application Number	10/657,494
	Filing Date	September 8, 2003
	First Named Inventor	Dennis M. Hilton
	Art Unit	1711
	Examiner Name	Zemel, Irina Sopjia
	Attorney Docket Number	621P002Div.
Total Number of Pages in This Submission		16

ENCLOSURES (Check all that apply)		
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<b>Remarks</b>		

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Firm Name	Nields & Lemack	
Signature		
Printed name	Kevin S. Lemack	
Date	January 11, 2006	Reg. No. 32,579

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Typed or printed name	Kevin S. Lemack	Date January 11, 2006

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